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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,736	11/12/2003	Hugo Cheung	TI-32389.1	8891

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EXAMINER

HUYNH, KIM NGOC

ART UNIT PAPER NUMBER

2182

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,736

Applicant(s)

CHEUNG ET AL.

Examiner

Kim Huynh

Art Unit

2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This application contains claims 13-20 drawn to an invention nonelected with traverse in Paper filed 08/05/04. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
2. Applicant mistakenly indicates that claims 1-6 are withdrawn; please note claims 1-6 are canceled per preliminary amendment filed 11/12/03.
3. Applicant is reminded to update the Cross Reference to Related Application with appropriate US Patent and/or Application Numbers.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 7-11 are rejected under 35 U.S.C. 103(a) as obvious over Hill et al (US 4,816,996) in view of Sowell et al. (US 5,047,927).

Claim 7, Hill discloses (Fig. 3) an SPI having plurality of hardware pointers (56, 60) to the memory location in a FIFO buffer (RAM 36), one hardware counter 51, and hardware logic device (30-34, 40-43, 49, -53) with bus interface 21 to utilize the FIFO

Art Unit: 2182

buffer for intermediate storage data transmitted from/to CPU (inherent function of SPI, see background). Hill discloses all the limitation of claim 7 above except the use of a DMA with the SPI for providing cycle stealing. Sowell discloses that it is well known to use DMA and its cycle stealing technique to reduce CPU overhead and aide in the transfer of data. It would have been obvious to one having ordinary skill in the art to utilize DMA in the system of Hill in order to take advantage of improving data communication and providing efficient means of data movement (Hill, col. 3, ll. 5-10).

Claim 8, the queue pointer produces signals SPI transmitter/receiving signal depending on the mode of transmission (col. 5, ll. 18-52).

Claim 9, Hill discloses the SPI having transmitter buffer and receiver buffer (input and output buffers 31-32) configured to receive/transmit data to the FIFO buffer.

Claims 10-11, Hill discloses the SPI module configured to operate as one of master and slave and having data register chip select signal 37 to the bus interface.

Response to Arguments

6. Applicant's arguments filed 12/06/04 have been fully considered but they are not persuasive.

7. In response to applicant's arguments that Sowell alone does not disclose the SPI having cycle stealing. Please note one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art as cited in the rejections. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this instant, the examiner has set forth the PRIMA FACIE case of obviousness in combining the references to take advantage of improving data communication and providing efficient means of data movement as suggested by Sowell; it is the applicant's responsibility to rebut the reasons for combining them by showing the statement for obviousness is in error or acquiesces to the examiner's position.

Conclusion

8. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

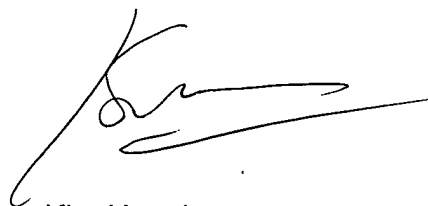
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2182

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (571) 272-4147. The examiner can normally be reached on Mon - Thu, 6:30AM - 5:00PM.



Kim Huynh
Primary Examiner
Art Unit 2182

KH
12/10/04